

20682

S/120/61/000/001/016/062
EO32/E114

γ -Background Compensated Boron Trifluoride Chamber

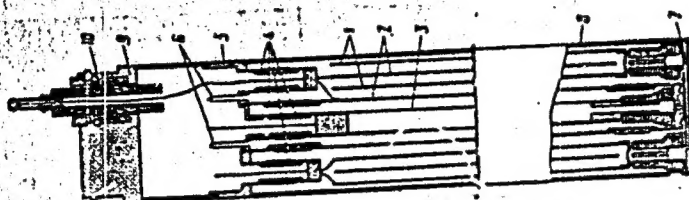


Fig. 2

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S/120/61/000/001/016/062
E032/E114

γ -Background Compensated Boron Trifluoride Chamber



Fig. 3

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DMITRIYEV, A.B.; VOROB'YEV, M.G.

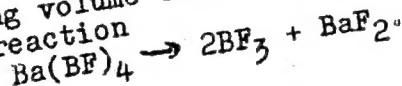
Boron trifluoride chamber compensated for gamma-background. Prib.
i'tekh. eksp. 6 no.1:55-57 Ja-F '61. (MIRA 14:9)
(Ionization chambers) (Neutrons)

05140
SOV/120-59-3-12/46
AUTHORS: Dmitriyev, A. B., Vorob'yev, M. G., Kosmarskaya, L.G.
and Chipurenko, N. I.

TITLE: The Construction of Boron Ionization Chambers
(Konstruktsiya bornykh ionizatsionnykh kamer)
(Konstruktsiya bornykh ionizatsionnykh kamer), 1959, Nr 3,

PERIODICAL: Priroda i tekhnika eksperimenta, 1959, Nr 3,
pp 59-62 (USSR)

ABSTRACT: A description is given of the following ionization chambers, all of which are designed to detect slow neutrons from the ionization due to the reaction $B^{10}(n,\alpha)Li^7$: the KN series (filled with BF_3), the KNT series (solid boron and argon gas) and the KNK series (compensated for the effect of the γ -background). 1) The KN-50 chamber. Fig 1 shows a photograph of this chamber. The electrodes consist of four coaxial tubes, 12, 22, 32 and 42 mm in diameter, made from nickel foil, 0.1 mm thick, and in electrical contact with each other. It is filled with BF_3 gas at 600 mm Hg, the working volume being 370 cm³. The gas is obtained from the reaction



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The Construction of Boron Ionization Chambers

Fig 3 gives the volt-ampere characteristics of the chamber when the latter was irradiated in the reactor channel. The saturation current at 500 V is 0.045 $\mu\text{amp}/\text{cm}^2$.

2) The KNT-52 chamber. This chamber is in the form of a two-electrode system placed in a hermetically sealed steel cylinder. The cylinder is filled with argon at a pressure of 6 atm. Each electrode (Fig 4) consists of 30 discs, 43 mm in diameter, placed parallel to each other. The discs have slots through which supports for electrodes of opposite sign can be inserted. The distance between the plates of opposite signs is 1.6 mm and the disc thickness is 0.4 mm. Boron is deposited on either side of each disc (except for the end discs), the total area covered in this way being 950 cm^2 . The insulation of the terminals at 300°C is 10^9 Ohms. Amorphous boron is used. The argon gas is 0.001% pure. The electrical characteristics of the chamber were described by Dmitriyev (Ref 3). The working voltage is 500 V and the working current 350 μamp . The absolute sensitivity of the chamber was found to be

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2×10^{-14} amp/neutron/cm² sec.

3) The KNK-53 and KNK-52 chambers. The counters belonging to the KNT series have an appreciable sensitivity to γ -radiation. Thus, for example, the KNT-52 counter has a γ -sensitivity of 3×10^{11} amp/r/hr. To reduce this γ -ray sensitivity the KNK series uses an additional compensating ionization chamber which is not neutron sensitive. The basic design of the chamber and the appropriate connections are shown in Fig 5 in which 1 is the envelope, 2 is the high voltage electrode of the γ -compensating part of the chamber, 3 is the high voltage electrode of the boron part of the chamber, 4 is the collecting electrode, 5 is the boron deposit and 6 is the measuring instrument. The electrode assembly of the KNK-53 counter consists of a system of alternate boron and compensating sections. Each electrode consists of a collection of discs, 43 mm in diameter. Fig 6 illustrates this scheme and Fig 7 shows a photograph of the electrode assembly. There is a total of 164 discs and the area of the boron covered discs is 1750 cm². A mixture of He + 1% N₂ at 6 atm is used

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The Construction of Boron Ionization Chambers

as the working gas. The nitrogen enables the breakdown voltage to be increased to 2 kV. The sensitivity of γ -radiation is found to be 3.4×10^{-13} amp/r/hr, while the sensitivity to slow neutrons is 4×10^{-14} amp/neutron/cm² sec. Yu. G. Nikolayev suggested the KNK-52 chamber. The KNK-52 is very similar to the KNK-53 except for the fact that the distribution of the boron and the compensating cells is asymmetric so that the sensitivity of the electrode system to γ -radiation depends on the geometry of the radiation field. There are 7 figures and 3 Soviet references.

SUBMITTED: April 4, 1958

Card 4/4

VOROB'YEV, M. G., Cand Med Sci (diss) -- "Preliminary electrophoresis of certain substances in local injuries to the skin by beta-radiation (Experimental investigation)". Leningrad, 1959. 16 pp (Min Health USSR, Central Sci Res Inst of Med Radiology), 300 copies (KL, No 10, 1960, 135)

VOROB'YEV, M.I.

Phagocytic reflex in schizophrenia and its change under the influence of insulin therapy and caffeine. Trudy Gos.nauch.-issl.inst.psikh. 27:242-247 '61. (MIRA 15:10)

1. Ivanovskiy meditsinskiy institut. Dir. - dotsent Ya.M.Romanov.
Kafedra psikhatrii. Zaveduyushchiy - dotsent D.A.Yevataf'yev.
Nauchnyy rukovoditel' - prof. G.I.Plesso.
(SCHIZOPHRENIA) (INSULIN SHOCK THERAPY) (CAFFEINE--PHYSIOLOGICAL EFFECT)
(PHAGOCYTOSIS)

SHURA-BURA, B.L.; VOROB'YEV, M.I.; SHLYKOV, V.I.

Disinfection of dishes and linen by means of electrolyzed sodium chloride solutions. Zhur.mikrobiol., epid.i immun. 33 no.8:9-14 Ag '62. (MIRA 15:10)

1. Iz kafedry obshchey i voyennoy epidemiologii Voenno-meditsinskoy ordena Lenina akademii imeni Kirova.
(DISINFECTION AND DISINFECTANTS) (BEDDING--DISINFECTION)
(TABLEWARE--DISINFECTION) (SODIUM CHLORIDE)

RUBTSOV, Nikolay Nikolayevich, prof., doktor tekhn.nauk; BALABIN, Vasil'y
Vasil'yevich; VOROB'YEV, Mikhail-Ivanovich; FANTALOV, L.I.,
prof., doktor tekhn.nauk; SIDOROV, V.N., inzh., red.; TIKHONOV,
A.Ya., tekhn.red.

[Foundry molds] Liteinye formy. Pod red. N.N.Rubtsova. Moskva,
Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 557 p.
(MIRA 13:1)

(Foundries--Equipment and supplies)
(Molding (Founding))

VOROB'YEV, M.I., dotsent, kand.tekhn.nauk; BORODINA, N.P.

Making models of plastics based on epoxide resins. Izv.vys.ucheb.
zav.; mashinostr. no.4:48-53 '60. (MIRA 14:4)

1; Moskovskoye vyssheye tekhnicheskoye uchilishche im. N.E.
Baumana.

(Models and modelmaking)

(Plastics—Molding)

ANUSHINA, M.G., inzh.; VOROB'YEV, M.I., kand.tekhn.nauk

Making shell cores. Izv.vys.ucheb.zav.; mashinostr. no.4:54-59
'60. (MIRA 14:4)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche im. N.E.Baumana.
(Coremaking)

VOROB'YEV, M.I.

Role of collective farms in strengthening contacts between school and life. Politekh. obuch. no.7:3-5 JI '59. (MIRA 12:9)

1. Predsedatel' kolkhoza imeni Lenina Gul'kevichskogo rayona Krasnodarskogo kraya.
(Gul'kevichi District--Field work (Educational method))

RUBTSOV, Nikolay Nikolayevich, prof., doktor tekhn.nauk; BALABIN,
Vasil'y Vasil'yevich; VOROB'YEV, Mikhail Ivanovich; FANTALOV,
L.I., prof., doktor tekhn.nauk, rezensent; SIDOROV, V.N.,
inzh., red.; TIKHANOV, A.Ya., tekhn.red.

[Foundry molds] Liteinye formy. Pod red. N.N.Rubtsova.
Moskva, Gos.nauchno-tekhn.isd-vo mashinostroit.lit-ry, 1959.

557 p.

(MIRA 13:5)

(Foundries--Equipment and supplies)
(Molding (Founding))

VOROB'YEV, M.I.

VOROB'YEV, M.I.; LINDE, V.V., professor.

Progressive practices at the disposal of all textile industries.
Tekst.prom. 15 no.2:4-6 F '55. (MLBA 8:3)

1. Glavnyy inzhener fabriki imeni Larkina (for M.I.Vorob'yev).
2. Predsedatel' Vsesoyuznogo Nauchno Inzhenernogo Tekhnicheskogo Obshchestva tekstil'shchikov (for V.V.Linde).
(Textile industry)

VOROB'YEV, M.K.; SAZHIN, F.N.

Pneumatic system for plant spraying in greenhouses. Zashch. rast.
ot vred. 1 bol. 8 no.2:32-34 F '63. (MIRA 15:7)

1. Starshiy inzh. teplichnogo kombinata sovkhoza "Belaya dacha",
Moskovskoy obl. (for Vorob'yev). 2. Zaveduyushchiy opornym
punktom Nauchno-issledovatel'skogo instituta ovoshchnogo
khozyaystva RSFSR (for Sazhin).
(Spraying and dusting equipment) (Greenhouse management)

PROCESS AND PROPERTIES INDEX	
VOROB'YEV, N.	B-D-7
<p>Use of vegetable oils as anti-foam agents. In YORNEY (Mashob, Shit, Dole, 1934, p. 4, 25-27). Among vegetable oils cotton oil has the highest anti- foaming power. Linseed oil is slightly less active and is improved in this respect by heating. The action of the oils in lowering the surface tension of molten iron is due to the presence of OH. Ch. Ann. (p)</p>	
<p>418-516 METALLURGICAL LITERATURE CLASSIFICATION</p>	
10000 00	10000 000 000
10000 00	10000 000 000

VOROB'YEV, M.I., inzh.

Automatic control of founding processes. Izv.vys.ucheb.zav.;
mashinostr. no.9:98-99 '62. (MIRA 16:2)

I. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni
Baumana.

(Founding)

(Automation)

VORON'YEV, M.I.

Collective farm and the school. Politekh. obuch. no. 6:22-23 Je '58.
(MIRA 11:6)

1. Predsedatel' kolkhosa imeni Lenina Gul'kevichskogo rayona
Krasnodarskogo kraja.

(Activity programs in education)

1. RUBTSOV, N.N., Prof.; AKSENOV, P.N., Prof.; VOROB'YEV, M.I.
2. USSR (600)
4. Founding
7. Basic tasks of Soviet science in the field of foundry production, Prof. N.N. Rubtsov, Prof. P.N. Aksenov, M.I. Vorob'yev, Lit.proizv. no. 5, 1953.
9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

VOROB'YEV, M.K., inzh.; SAZHIN, F.N., nauchnyy sotrudnik; GALUSHKO, E.D.,
~~inzh.~~-konstruktor

Permanent unit for spraying plants in greenhouses. Zashch.rast.
ot vred.i bol. 4 no.6:23-24 N-D '59. (MIRA 15:11)

1. Nauchno-issledovatel'skiy institut ovoshchnogo khozyaystva RSFSR.
(for Sazhin, Galushko).
(Spraying and dusting equipment) (Greenhouse management)

VOROB'YEV, M.M., kand. veter. nauk; PANCHENKO, I.K., veterinarnyy vrach

Treating cyathostomosis in geese. Veterinariia 41 no.11:
56-58 N '64. (MIRA 18.11)

1. Chernigovskaya oblastnaya veterinarnaya laboratoriya.

VOROB'YEV, M. M.

USSR/Medicine - Cattle Diseases
Gnats

Jun 49

"Disease of Cattle and Horses Caused by the Bite of Gnats (Melusino Toxicosis),"
N. I. Gorban', M. M. Vorb'yev, Kiev Vet Inst, 2 pp

"Vet" No 6

Studies described show that this disease, Melusino toxicosis, is due to toxin of the acid group introduced into the blood by the bite of the Melusina. The toxin causes erythropenia and severe leukopenia. The best treatment is a local application of Aqua ammonia and 300 ml of 30% alcohol by mouth. Suggests further study of means of eliminating the gnats, and of the chemical structure of the toxin.

PA 67/49T97

VOROB'EV, N. M., Docent

Cand Tech Sci

Dissertation: "Profiling the Mill Cutters for Pieces with Spiral Grooves."

21/6/50

Moscow Machine Tool Inst imeni I. V. Stalin

SO Vecheryaya Moskva
Sum 71

YEROBYEV, M.M.

Yerob'yev, M.M. and N.I. Gorban (Kiev Veterinary Institute)

"Notes from Experience Gained by Carrying out Measures for Combatting
Macracontariychnosis in Eggs,"

SO: Veterinariya, Vol 27, No 4, pp 26-30, 1950.

VOROB'YEV, M. M.

FD-1314

USSR/Medicine - Veterinary

Card 1/1 : Pub 137-14/22

Author : Vorob'yev, M. M. and Kolotilov, I. G.

Title : ~~Study of the clinical aspects of pathologico-anatomic changes in geese~~
infected with coccidiosis

Periodical : Veterinariya, 9, 45, Sep 1954

Abstract : There are 2 distinct types of coccidiosis of the geese depending upon the site of localization of the causative organism. The causative organism of nephritic coccidiosis is *E. truncata*; the three species causing intestinal coccidiosis are *E. anseris*, *E. nocens*, and *E. parvula*. Dissection of intestines of geese that died of coccidiosis revealed a picture of acute inflammation of the mucous membrane, hyperemia and, in some instances, hemorrhagic bloches, and liver, yello-red color and degenerated. No apparent changes have been noted in pancreas and spleen. Large number of small yellow-white spots have been noted in kidneys. Coccidiosis has been noted mostly in geese that are between 3 weeks and 4 months old. The heaviest death losses have occurred on the 5th and 6th days of infection.

Institution : City of Novgorod-Severskiy, Chernigovskaya Oblast

Submitted :

YOROL'YEV, M.M.

Yorol'yev, M.M. and Kolesnikov, I.I. (Vets, Novogorod-Savskiy Chernigov Oblast).

"On the Epizootiology of Filikolles of Domestic Ducks in the Ukraine,"

SO: Veterinariya, Vol 31, No 4, pp 22-27, 1954.

VOROB'YEV, M. M.

"Ligulesis of Domestic Ducks." Cand Vet Sci, All-Union Inst of
Helminthology imeni K. I. Skryabin, Min Agriculture USSR, Moscow, 1955.
(KL, No 12, Mar 55)

SO: Sum. No. 670, 29 Sep 55—Survey of Scientific and Technical
Dissertations Defended at USSR Higher Educational Institutions (15)

VOROB'YEV, M.M.; PANCHENKO, I.K.

Distribution * opisthorchosis among cats in Chernigov and Kiev
Provinces; an abstract. Med. paraz. i paraz. bol. 33 no.5:625
S-0 '64. (MIRA 18:4)

VOROB'YEV, M.M., kand. veter. nauk; AVTUKHOV, P.R., prepodavatel';
TSIMBALOV, I.N., veterinarnyy vrach; MOROZOV, I.G., veteri-
narnyy vrach; KALUGIN, V.I., kand. veter. nauk

Book reviews and bibliography. Veterinariia 40 no.4:82-86
Ap. '63. (MIRA 17:1)

1. Vitebskiy pedagogicheskiy institut (for Avtukhov).

YUKHNOVICH, A.N., veter. vrach (Yel'ninskiy rayon, Smolenskoj oblasti);
 RUDOMETKIN, Ya.S., veter. vrach; EVENTOV, M.Z., veter. vrach;
 SOBOLEV, A.S., dotsent (Estonskaya SSR); DOL'NIKOV, Yu.Ya., kand.
 veter. nauk; PALIMPSESTOV, M.A., prof.; SIMONENKO, N.M., dotsent;
 GONCHAROV, A.P., assistant; BEZRUKOV, A.A.; FROLENKOV, N.A., veter.
 vrach (Serov, Sverdlovskoj oblasti); KOSHCHHEYEV, P.M.; VOROB'YEV,
 M.M., kand. veter. nauk; YANCHENKO, P.Kh., veter. vrach;
 AMELIN, I.P.; BYCHKOV, A.I., kand. veter. nauk; SHVYREV, G.I.,
 veter. vrach (Stavropol'skiy kray); DANILIN, N.F.; TRUSHIN, A.Z.,
 veter. vrach; SKRYPNIKOVA, T.K., veter. fel'dsher; MIKHEYEV, A.D.;
 KARMANOVA, Ye.M., kand. biol. nauk; REMIZOV, Ye.S., mladshiy
 nauchnyy sotrudnik; ANTIPIN, D.N., referent

From helminthological practice. Veterinariia 38 no.7:55-58
 (MIRA 16:8)
 Jl '61.

1. Reshetovskiy veterinarnyy uchastok, Novosibirskoy oblasti (for Rudometkin).
2. Sovkhoz "Buda-Koshelevskiy" Gomel'skoy oblasti (for Eventov).
3. Sibirskiy nauchno-issledovatel'skiy veterinarnyy institut (for Dol'nikov).
4. Khar'kovskiy veterinarnyy institut (for Palimpsestov, Simonenko, Goncharov).
5. Blagoveshchenskiy sel'skokhozyaystvennyy institut (for Bezrukov).
6. Novo-Nikolayevskiy veterinarnyy uchastok Krasnodarskogo kraya (for Lochkarev).
7. Karpilovskiy veterinarnyy uchastok Chernigovskoy oblasti (for Ponomarenko).
8. Kamalinskiy veterinarnyy uchastok Krasnoyarskogo kraya (for Koshcheyev).

(Continued on next card)

YUKHNOVICH, A.N.—(continued) Card 2.

9. Novgorod-Severskaya mezhrayonnaya veterinarnaya laboratoriya, Poltavskoy oblasti (for Vorob'yev).
 10. Braginskaya rayonnaya veterinarnaya lechebnitsa, Gomel'skoy oblasti (for Yanchenko).
 11. Nachal'nik veterinarnogo otdela Chelyabinskogo oblastnogo sel'skokhozyaystvennogo upravleniya (for Amelin).
 12. Chelyabinskaya oblastnaya veterinarnaya laboratoriya (for Bychkov).
 13. Kaliningradskaya nauchno-issledovatel'skaya veterinarnaya stantsiya (for Danilin).
 14. Sovkhoz "Rodina" Kikvidzenskogo rayona, Stalingradskoy oblasti (for Trushin, Skrypnikova).
 15. Zaveduyushchiy Kirovo-Chepetskoy myaso-molochnoy i pishchevoy kontrol'noy stantsiyey, Kirovskoy oblasti (for Mikhayev).
 16. Gel'mintologicheskaya laboratoriya AN SSSR (for Karmanova).
 17. Zapadno-Kazakhstanskaya nauchno-issledovatel'skaya veterinarnaya stantsiya (for Remizov).
- (Veterinary helminthology)

VOROB'YEV, M.M., kand.veterianarnykh nauk

Measures for preventing opisthorchiasis in White Russia. Zdrav.
Belor. 6 no. 5:49-50 My '60. (MIRA 13:10)
(WHITE RUSSIA--LIVER FLUKE)

ARKHANGEL'SKIY, I.I., prof.; DARDA, P.N.; CHISTOV, N.P., kand. veter. nauk;
NIKULIN, V.N.; YOROB'YEV, M.M., kand. veter. nauk (Vitebsk, BSSR);
ARKHIPOV, V.V., kand. veter. nauk

Infection focuses. Veterinariia 41 no.1:29-33 Ja '64.
(MIRA 17:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii (for Arkhangel'skiy). 2. Nachal'nik veterinarnogo otryada postoyanno-deystvuyushchey protivoyashchurnoy ekspeditsii Gosudarstvennogo nauchno-kontrol'nogo instituta veterinarnykh preparatov (for Darda). 3. Leningradskiy nauchno-issledovatel'skiy veterinarnyy institut (for Chistov). 3. Pakovskoye oblastnoye upravleniye proizvodstva i zagotovok sel'skokhozyaystvennykh produktov (for Nikulin).

1ST AND 2ND COPIES										3RD AND 4TH COPIES									
<p>PROCESSES AND PROPERTIES INDEX</p> <p>Electric heating of the platinum capillary of Drebockmidt for the analysis of combustible gases. <i>By N. V. Vashkov, Zaryadnyy Lab. 6, 707 (1937); Zhurnal Tekhnicheskoy Khimii, 10, 1007 (1937).</i> The elec. current is passed directly through the capillary. The voltage and intensity must be calcd. as to heat the capillary to bright redness. When current from the ordinary distributing circuit is used, a transformer must be used to lower the voltage to 1.2; the intensity is then about (8) amp. A. P. Conture</p>																			
<p>450-35A METALLURGICAL LITERATURE CLASSIFICATION</p>																			
1ST AND 2ND COPIES										3RD AND 4TH COPIES									

L 29716-66 EWP(k)/ENT(m)/T-2/ENP(w)/ENP(v)/ENP(t)/ETI IJP(c) EM/JD/HN

ACC NR: AP6007787 (N) SOURCE CODE: UR/0114/66/000/002/0021/0023

AUTHOR: Vorob'yev, M. S. (Candidate of technical sciences)

71
B

ORG: none

TITLE: Temperature stresses in seamless forged rotors for steam turbines

SOURCE: Energomashinostroyeniye, no. 2, 1966, 21-23

TOPIC TAGS: steam turbine, turbine rotor, thermal stress, elastic modulus, Poisson coefficient

ABSTRACT: The article presents an approximate method for calculating the temperature stresses in seamless forged rotors for steam turbines with an unsteady supply of heat. The method is based on the use of generalized curves. The expressions for the peripheral temperature stresses on the surfaces of a hollow cylinder of infinite length can be written in the form:

$$\sigma_1 = \frac{\alpha E}{1-\nu} [\bar{t}(r) - t(r, \tau)]; \quad (1)$$

$$\sigma_2 = \frac{\alpha E}{1-\nu} [\bar{t}(r) - t(R, \tau)]. \quad (2)$$

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UDC: 62-253.621.165.001.5

L 29716-66

ACC NR: AP6007787

where $\bar{t}(\tau)$, $t(r_1, \tau)$, and $t(R, \tau)$ are the mean integral temperature, and the temperatures on the inside and outside surfaces as a function of the time, τ ; α , E , and ν are the coefficient of linear expansion, the elastic modulus, and the Poisson coefficient; r_1 and R are the inside and outside radii of the cylinder. For a solid cylinder the peripheral forces on the outside surface are determined by relation (2) and at the axis of the cylinder by the formula:

$$\sigma_r = \frac{\alpha E}{2(1-\nu)} [\bar{t}(\tau) - t(0, \tau)]. \quad (3)$$

Based on a series of calculation, the article presents a graph showing the nature of the temperature change of the surrounding medium, and a second graph showing the stresses as a function of the Fourier number. It is claimed that this method of calculation permits a simple choice of optimum start-up conditions for a steam turbine. Orig. art. has: 11 formulas and 2 figures.

SUB CODE: 13, 20/ SUBM DATE: none/ ORIG REF: 003.

Card 2/2 *cc*

USSR/Microbiology - Microbes Pathogenic for Man and Animals.
Brucellae

F

Abs Jour : Ref Zhur Biol., No 22, 1958, 99441

Author : Vorob'yev, M.V., Novik, S.A., Mityureva, N.N.

Inst : Omsk Scientific Research Institute of Epidemiology,
Microbiology and Hygiene

Title : On the Problem of Migration of Brucella Among Farm
Animals.

Orig Pub : Tr. Omskogo n.Ol. in-ta epidemiol., mikrobiol. i gijieny
1957, No 4, 245-248

Abstract : The possibility of migration of Brucella of sheep origin
to cattle was established by typing of cultures. -- L.
G. Ivanova

Card 1/1

VOROB'YEV, N.; OSOVSKIY, Ya.

Some problems of vocational education in the German Democratic
Republic. Prof.-tekh. obr. 21 no.12:29-31 D '64. (MIRA 18:2)

VOROB'YEV, N., polkovnik

On a complex theme. Voen. vest. 43 no.9:78-82 S '63.
(MIRA 16:10)

(Antiaircraft artillery)

IVANOVA, V.S.; GORODIYENKO, L.K.; GEMINOV, V.N.; ZUBAREV, P.V.;
FRIDMAN, Z.G.; LIBEROV, Yu.P.; TEREHT'YEV, V.F.; VOROB'YEV,
N.A.; KUDRYASHOV, V.G.; BERLIN, Ye.N., red.

[Role of dislocations in the hardening and the failure of
metals] Rol' dislokatsii v uprochnenii i razrushenii metal-
lov. Moskva, Nauka, 1965. 179 p. (MIRA 18:10)

1. Moscow. Institut metallurgii. 2. Laboratoriya prochnosti
Instituta metallurgii im. A.A.Baykova, Moskva (for all except
Berlin).

VOROB'YEV, N.A.

Power supply of the intermediate points of selective communication systems from a.c. networks. Avtom., telem. i sviaz' 9 no.12:28-29 D '65.

(MIRA 19:1)

1. Starshiy inzh. Shakhun'skoy distantsii Gor'kovskoy dorogi,

29/08-66 EWT(m)/EWP(w)/T/EWP(t)/ETI JD
ACC NR: AP6015080

SOURCE CODE: UR/0020/66/168/001/0051/0054

AUTHORS: Ivanova, V. S.; Ragozin, Yu. I.; Vorob'yev, N. A.

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii)

TITLE: Energy analysis of metal damage in high temperature deformation

SOURCE: AN SSSR. Doklady, v. 168, no. 1, 1966, 51-54

TOPIC TAGS: ~~metal crystal, material~~ deformation, steel, yield strength, / 1Kh18N9T steel
material film, high temperature research

ABSTRACT: The structure-energy theory of failure in steel alloys was investigated experimentally. The experimental and calculated values of A_p for high purity Ta, Al, and Cu are compared first, and the comparison is found to be satisfactory. A_p is the specific energy absorbed by the metallic crystals which goes into breaking the inter-atomic bonds under a limiting static deformation of the metal. The degree of damage in the material is defined by

$$\Pi = \frac{(A_p)_0 - (A_p)_i}{(A_p)_0} \cdot 100\%$$

where subscript "i" stands for the specific breaking energy under tension at 700C.

Card 1/2

UDC: 620.178.38

L 29786-66

ACC NR: AP6015080

A 1Kh18N9T steel specimen is subjected to these conditions, and the results are given as curves of π versus percent deformation ϵ , and curves of ϵ or A_p versus time. The π versus ϵ curves are linear, and they show a discontinuity at $\epsilon = 4\%$ (or 20 kg/mm^2) above which the π/ϵ slope becomes larger. This paper was presented by Academician Yu. N. Rabotnov on 16 August 1965. Orig. art. has: 4 figures and 2 formulas.

SUB CODE: 11/20/ SUBM DATE: 03Aug65/ ORIG REF: 004/ OTH REF: 003

Card 2/2 *RV*

ACC NR: AP5028577 EWP(z)/EWP(b)/EWP(l) MJW/JD SOURCE CODE: UR/0148/65/000/011/0132/0135

AUTHOR: Ivanova, V. S., Vorob'yev, N. A.

ORG: IMET

TITLE: Patterns of stress-rupture strength of austenitic steel in the presence of stresses above the yield point

SOURCE: IVUZ. Chernaya metallurgiya, no. 11, 1965, 132-135

TOPIC TAGS: rupture strength, metal stress, electric conductivity, austenitic steel, yield stress, creep, metal property, material deformation / 1Kh18N9T austenitic steel

ABSTRACT: The results of an investigation of the patterns of rupture of 1Kh18N9T austenitic steel under conditions of temporary creep at 700°C are presented. Specimens 5 mm in diameter and 25 mm in length were tested for stress-rupture strength. Given a specific stress ($\approx 20 \text{ kg/mm}^2$) the curve of the relation $\sigma - \log t$ displays a sharp inflection point (Fig. 1). This may be attributed to the cumulative damage of the metal under conditions of prolonged exposure to stress: it may be assumed that the intensity of this cumulative damage becomes abruptly magnified at some point (the inflection point of the curve in Fig. 1). To verify this assumption the effect of prior high-temperature deformation on certain physical and mechanical properties of the steel (electric conductivity, energy of limiting deformation, etc.) was experimen-

Card 1/4 UDC: 669.15--194:669.26'24':539.434

L 13070-66

ACC NR: AP5028577

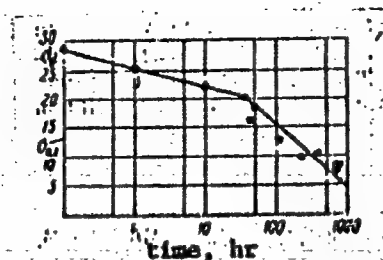


Fig. 1. Curve of the stress-rupture of
1Kh18N9T steel at 700°C

Card 2/4

L 13070-66
ACC NR: AP5028577

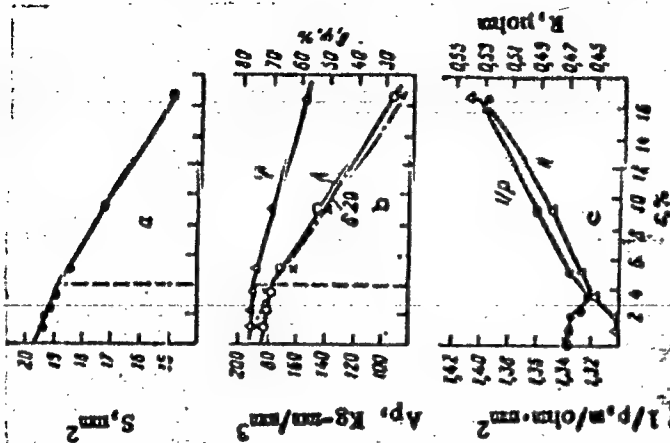


Fig. 2. Minimal cross-sectional area of specimen (a), energy A_p of limiting deformation, relative elongation at 20°C -- δ_{20} and reduction in area ψ at 20°C (b) and also electric conductivity of steel at 20°C (c) as a function of prior deformation at 700°C

Card 3/4

L 13070- 66

ACC NR: AP5028577

tally investigated. Specimens of 1Kh18N9T steel were stretched in an IM-4R tensile testing machine to degrees of deformation equal to 1, 1.9, 2.3, 3.4, 4.9, 9.2, 16.6 and 18.3%, on first being kept at 700°C for 50 min. It was found that in the presence of a deformation of 4% at 700°C 1Kh18N9T steel undergoes a definite change in various physical and mechanical properties (Fig. 2). This degree of deformation corresponds to a stress of 20 kg/mm², which is close to the stress at which the inflection point appears on the curve of stress-rupture strength. These findings warrant the conclusion that the sharp change in the shape of the curve of the stress-rupture strength of 1Kh18N19T steel at 700°C when tested under conditions of temporary creep in the presence of stresses above its yield point is associated with the differences in its cumulative damage in the process of loading and corresponds to the stress at which the localization of strain commences in a definite volume of the metal. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: 23Jun65/ ORIG REF: 002/ OTH REF: 002

Card 4/4 *DR*

12153-66 (N) EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JJ/HW
 UR/0096/65/000/012/0043/0046 162
 ACC NR: AP 028747 41,55 2
 AUTHOR: Ivanova, V.S. (Doctor of Tech.Sci.); Vorob'yev, N.A. (Engineer)
 ORG: Metallurgical Institute im. A.A. Baykov (Institut metallurgii)
 TITLE: Investigation of damage to type 1Kh18N9T steel and type EI-437A alloy 15
 SOURCE: Teploenergetika, no. 12, 1965, 43-46
 TOPIC TAGS: alloy steel, nickel base alloy, elastic deformation, high temperature fatigue, yield stress/1Kh18N9T alloy steel, EI-437A nickel base alloy
 ABSTRACT: The article presents the results of an investigation of deformation at high temperatures. Composition of the samples tested was as follows(%): 1Kh18N9T steel: 0.094 carbon, 0.46 silicon, 1.51 manganese, 7.6 nickel, 18.2 chromium, 0.56 titanium, and remainder iron; EI-437 alloy: 0.04 carbon, 0.29 silicon, 0.30 manganese, 0.007 sulfur, nickel base, 20.30 chromium, 2.63 titanium, 0.88 aluminum, 0.35 iron, 0.010 cerium, and 0.0005 lead. As a criterion of high temperature deformation damage, the authors adopted the relative change in the specific energy of the limiting deformation
 Card 1/2 UDO: 620.17 2

L 12153-66

ACC NR: LP5028747

$$\Pi = [(A_p)_0 - (A_p)_e] / (A_p)_0 \cdot 100\%$$

where $(A_p)_0$ is the specific energy of linear deformation of the starting metal and $(A_p)_e$ is the specific energy of limiting deformation after deformation of the metal by a given amount. Static deformation was effected by stretching the samples (5 mm in diameter and 25 mm long) at temperatures of 700 and 800°C. Before loading, all samples were held at the above temperatures for one hour. The specific energy of the limiting deformation was then determined at room temperature. The damage under elongation was evaluated by the change in A_p as a function of the preliminary deformation at high temperatures. The experimental results are exhibited in a series of figures. A further figure shows curves of long term strength and the beginning of intensive damage for the materials investigated. Orig. art. has: 6 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 00/ ORIG REF: 007/ OTH REF: 002

FW
Card 2/2

VOROB'YEV, N.A., kand. tekhn. nauk; CHERNYUGOV, A.D., inzh.

Efficient utilization of "intervals" for track and construction
work. Zhel. dor. transp. 47 no.8:24-28 Ag '65. (MIRA 18:9)

YALOVY, Yu.G.; VOROB'YEV, N.A., kand.tekhn.nauk, retsenzent; MEL'NIK, A.L.,
kand.tekhn.nauk, retsenzent; PETROVA, V.L., inzh., red.;
KHITROVA, N.A., tekhn.red.

[Distribution of passing points on double-track lines with an
automatic block signal system] Razmeshchenie obgonnykh punktov na
dvukhputnykh liniakh s avtoblokirovkoi. Moskva, Transzheldorizdat,
1963. 72 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii
institut zheleznodorozhnogo transporta. Trudy, no.259).

(MIRA 16:8)

(Railroad engineering) (Railroads—Signaling—Block system)

BERNGARD, K.A., prof., doktor tekhn.nauk; VOROB'YEV, N.A., kand.tekhn.nauk;
KANDELINSKIY, A.M., inzh. (Dnepropetrovsk); KARNOVSKIY, A.I.,
kand.tekhn.nauk (Dnepropetrovsk); NIKULIN, I.I., kand.tekhn.nauk;
(Dnepropetrovsk)

"Organization of railroad traffic" by I.G.Tikhomirov, V.A.
Bulanov, A.V.Vinnichenko. Reviewed by K.A.Berngard and others.
Zhel.dor.transp. 44 no.8:94-96 Ag '62. (MIRA 15:8)

1. Zamestitel' nachal'nika Pridneprovskoy dorogi (for Kandelinskiy).
(Railroads--Traffic) (Tikhomirov, I.G.)
(Bulanov, V.A.) (Vinnichenko, A.V.)

VOROB'YEV, Nikolay Yevgen'yevich [Vorobiov, M.IE.]; VINNITSKIY, S.
[Vinnyts'kyi, S.], red.; MOLCHANOVA, T., tekhn. red.

[War on weeds] Viina bur'ianam! Odessa, Odes'ke kryzhkove vyd-vo,
1962. 113 p. (MIRA 15:6)

(Ukraine--Weed control)

VOROB'YEV, N.

Lathe for shaping 2.5-3 mm wire. Suggested by N.Vorob'ev.
Rats.i izobr.v stroi. no.9:13-15 '59. (MIRA 13:1)

1. Po materialam stroitel'nogo tresta No.20 Glavleningradstroya.
(Wire)

VOROB'YEV, N.

The rest home "Grove." Prom.koop. 13 no.10:37 0 '59.
(MIRA 13:2)
(Pesochin--Labor rest homes)

KARETNIKOV, A.D., doktor tekhn.nauk; ASHUKIN, D.D., kand.tekhn.nauk;
VOFOB'YEV, N.A., kand.tekhn.nauk; TISHKIN, Ye.M., inzh.

How to organize the local operations on lengthened haul
distances. Zhel.dor.transp. 44, no.8:55-59 Ag '62. (MIRA 15:8)

(Railroads--Management)

ARUTYUNOV, G.A., polkovnik meditsinskoy sluzhby, kand. med. nauk; VOROB'YEV,
N.A., mayor meditsinskoy sluzhby; KUZNETSOV, M.I., kand. biolog.
nauk; UDALOV, Yu.F., podpolkovnik meditsinskoy sluzhby, kand. med.
nauk

The effect of flying in supersonic aircraft on metabolism in the
body of an aviator. Voen. - med. zhur. no.1:60-64 1963.

(MIRA 17:8)

VOROB'YEV, N.A., starshiy nauchnyy sotrudnik

Clinical anatomical analysis of the surgical approach to the hip joint by A.G. Eletskii's modified method. Ortop.travm.i protez. 21 no.5:70-71 My '60. (MIRA 13:9)

1. Iz Ukrainского nauchno-issledovatel'skogo instituta ortopedii i travmatologii (ispolnyayushchiy obyazannosti direktora - N.N. Musiyenko).

(HIP JOINT—SURGERY)

INYUSHIN, V.M.; VOROB'YEV, N.A.

Histochemistry of nucleic acids in the erythrocytes of a frog.
Trudy Inst. fiziol. AN Kazakh. SSR. 4:178-183 '63. (MIRA 17:10)

VOROB'YEV, N.A., kand. tekhn. nauk; CHERNYUGOV, A.D., inzh.

Possibility to reduce the number of overtaking points for the
technical operations. Zhel. dor. transp. 46 no.10:34-36 0 1/2,
(MIRA 17:11)

KARETNIKOV, A.D., kand.tekhn.nauk; VOROB'YEV, N.A., kand.tekhn.nauk; PETROVA,
V.L., inzh.red.; BOBROVA, Ye.N., tekhn.red.

[Improvement of train sheets and better utilization of the traffic
capacity of railroad lines] Sovershenstvovanie grafika dvizheniia
poezdov i uluchshenie ispol'zovaniia propusknoi sposobnosti zhelez-
nodorozhnykh lini. Moskva, Vses.izdatel'sko-poligr. ob"edenie
m-va putei soob., 1960. 218 p. (Moscow. Vsesoiuznyi nauchno-issledo-
vatel'skii institut zheleznodorozhnogo transporta. Trudy, no.203).
(MIRA 14:5)

(Railroads--Traffic)

KHALILOV, F.Kh.; INYUSHIN, V.M.; VOROB'YEV, N.A.

Micromorphology and histochemistry of fish intestines. I. . 4W Kazakh.
SSR. Ser. biol. nauk no.2:82-89 '63. (MIRA 17:10)

VOROB'YEV, N.A., kand. tekhn. nauk; GRISHIN, M.S., kand. tekhn. nauk

Determining the weight of trains and traffic volume by the
load per unit length. Vest. TSNII MPS 24 no.2:47-51 '65.
(MIRA 18:5)

KARETNIKOV, A.D., prof., doktor tekhn. nauk; VOROB'YEV, N.A., kand. tekhn.
nauk

Introduce the new advanced practices in the preparation of train
sheets. Zhel. dor transp. 47 no.3:3-9 Mr '65. (MIRA 18:5)

VOROB'YEV, N.A., Cand Tech Sci -- (diss) "Study of problems of ^{the}
~~working out~~ ^{the movement} of trains on railroad lines
dense with freight traffic." Mos, 1958, 15 pp (Min of Railways USSR.
All-Union Sci Res Inst of Railroad Transport) 100 copies
(KL, 27-58, 108)

- 91 -

VOROB'YEV, H.A., kand. tekhn. nauk

*Effect of track development and the location of intermediate
stations on the traffic capacity of two-track lines. Vest. TSNII
MPS 18 no.7:38-43 N '59. (MIRA 13:2)
(Railroads--Traffic)*

ACC NR: AR034970 SOURCE CODE: UR/0272/66/000/008/0026/0026

AUTHOR: Vorob'yev, N. A.; Kuznetsov, N. A.

TITLE: Noncontact method of precise measuring of distances and small displacements

SOURCE: Ref. zh. Metrologiya i izmeritel'naya tekhnika, Abs. 8.32.214

REF SOURCE: Tr. Leningr. in-t aviats. priborostr., vyp. 45, 1965, 127-130

TOPIC TAGS: measuring instrument, noncontact measurement, distance measurement

ABSTRACT: A radio-engineering method is suggested for noncontact measurements of distances and small displacements of objects made of materials impermeable to radio waves. The principle of the measuring instrument is described, its operation is analyzed, and the results of experiments carried out on the model of the device are given. [Translation of abstract]

SUB CODE: 14, 09/

Card 1/1

UDC: 531.719.2.082.74:621.396

ACC NR: AT603/437 (A) SOURCE CODE: UR/0000/66/000/000/0040/0044

AUTHOR: Ivanova, V. S.; Vorob'yev, N. A.

ORG: none

TITLE: The laws governing damage to austenitic steel at high temperatures

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 40-44

TOPIC TAGS: austenitic steel, creep, tensile stress, metal deformation

ABSTRACT: The article reports a study of the laws governing damage to austenitic steel Type 1Kh18N9T under conditions of active loading and short term creep at a temperature of 700°C. Before the tests the samples were quenched from 1100°C in water. The samples were tested for long term strength on VP-8 machines. The experimental results are plotted on a curve which shows that the dependence of the long term strength at a fixed stress $\sigma = 20 \text{ kg/mm}^2$ exhibits a sharp point of inflection. Samples of Type 1Kh18N9T were subjected to elongation stress in a IM-4R machine up to different degrees of deformation, equal to 1; 1.9; 3.4; 4.9; 9.2; 16.6; and 18.3%. Before the stress was applied the samples were held at the experimental temperature for 50 minutes. On the basis of the experimental data, the following criterion is proposed for the energy

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ACC NR: AT6034437

necessary to cause damage to 1Kh18N9T steel at a temperature of 700°C:

$$\Pi = \left[\frac{A_0 - A_t}{A_0} \right] \cdot 100\%.$$

The article proposes a method for determining the minimum stress σ_n under whose action there is observed a noticeable localization of the deformation in a determined volume of the metal, even in an early stage of creep. At $\sigma > \sigma_n$, the first and second stages are absent on the creep curve. It is shown that the sharp break in the curve of the long term strength for 1Kh18N9T steel at 700°, under conditions of short term creep at stresses above the creep limit, is connected with the appearance of irreversible deformation, which appears even during the loading period. It is also shown that the start of the accelerated creep period is connected with the localization of the deformation in a determined volume of the metal. Orig. art. has: 4 formulas and 5 figures.

SUB CODE: 11/ SUBM DATE: 10Jun66/ ORIG REF: 003/ OTH REF: 002

Card 2/2

13

CA

PROCESSING AND PROPERTY INDEX

Glypal resins and their industrial applications. Rudolf
Ditmar. *Caoutchouc et gomme percha* 32, 1707-8 (1935).
Various articles and patents are reviewed. C. C. D.
Use of vegetable oils as anti foam agents. N. Vardiev.
Maishovno Zaprave 9, No. 3, 257 (1934); *Chimie et
industrie* 32, 1405. Oil vegetable oils, castor oil has the
highest anti-foam power; that of raw linseed oil is slightly
less, and is considerably increased by boiling. A study
carried out on molasses showed that addition of small quan-
tities of oils decreased its surface tension. The rate of
destruction of foam on addition of oil parallels the decrease in
surface tension of the solution. The anti-foam properties of
raw castor oil and of boiled linseed oil are attributable to
the presence of OH groups; this view finds confirmation
in the theory of flotation of ores according to which the
decrease in surface tension of aq. solution is due chiefly to
substances containing polar groups. A. P. C.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

VOROB'YEV, N.; KOVROVA, P., doyardka, dvazhdy Geroy Sotsialisticheskogo Truda,
deputat Verkhovnogo Soveta RSFSR; KONYAYEV, I.; GORYUNOV, Y.

Lights on the banks of the Oka. Sov.profsoiuzy 6 no.8:49-52 J1 '58.
(MIRA 11:9)

1. Shilovskiy raykom profsoyuza rabotnikov kul'tury (for Vorob'yev).
2. Profgruporg traktornoy brigady kolkhoza imeni Kalinina (for Konyayev).
(Ryazan Province--Social group work)

VOROB'YEV, N.

Defective ideals of associative systems of substitutions, Uch.
zap. LGU no.111:47-53 '49. (MIRA 10:8)
(Groups, Theory of)

AMILOV, Yu., brigadir stolyarov; VOROB'YEV, N., rabotnik; BLUM, Antonina;
IVANOVA, N., shveya-motorishtka; DROZD, Ye., brigadir;
ZHIGUNOVA, L., udarnik korraristicheskogo truda, broshyurovshchitsa
(Moskva)

Program of our life and our bright future. Part. iron. i khud.
promys. 2 no.2:2-3 S '61. (SUA 14:11)

1. Zerkal'naya fabrika No.2, Moskva (for Amilov). 2. Garderobnaya
kontora No.1, Moskva (for Blum). 3. Shveynaya fabrika
No.1, Moskva (for Ivanova). 4. Stalinskiy promyshlennyy
kombinat, N. Kishinev, Moldov SSR (for Drozd).
(Communist Program of the Soviet Union--Congressmen)

VOROB'YEV, N.

Industrial Statistics

Victories of labor, Krast'ianka 30 No. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, July 1952 ~~1953~~, Uncl.

VOROB'YEV, N.

Vorob'yev, N. - "Defective ideals of associative supporting systems," (in index: P. Vorob'yev), Uchen. zapiski (Leningr. gos. un-t im. Zhdanova), Seriya matem. nauk, Issue 16, 1949, p. 47-53.

SO: U-3736, 21 May 53, (Letopis 'Zhurnal 'nykh Statey, No. 17, 1949).

1. VOROB'YEV, N.
2. USSR (600)
4. Ryabushkin, T. V.
7. Serious defects in a textbook (Collection of problems and exercises for practical studies and seminars in statistical theory. M. A. Kuznetsova, T. V. Ryabushkin, I. I. Shul'gin. Reviewed by N. Vorob'yev. Vest. stat. No. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953, Unclassified.

~~VOROB'YEV, H.~~

Leningrad readers advise. Vnesh. torg. 30 no.10:36 '60.

(Russia--Commerce--Periodicals)

(MIRA 13:10)

VOROB'YEV, N.A., insh.

Working out graphic train sheets for heavily traveled lines.
Zhel. dor. transp. 41 no.2:62-66 F '59. (MIRA 12:3)
(Railroads--Traffic)

VOROB'YEV, N. A.

KAZIMIROV, A. S., Inzhener i DMITRIYEVSKIY, N. V., Inzhener i SERGEYEV, A. I., Inzhener i VOROB'YEV, N. A., Inzhener
Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta stroitel'nogo i dorozhnogo mashinostroyeniya

ISSLEDOVANIYE V STENDOVYKH USLOVIYAKH UPROSHCHENNOY USTANOVKI MNOGOKOVSHVVOGO
EKSNAVATORA DLYA VYYAVLENIYA FAKTOROV, VLIYAYUSHCHIKH NA KONSTRUKTSIYU KOVSHEVOY
TSEPI (DINAMIKA, NAPOLNENIYE I RAZGRUZKA KOVSHEY, RABOTA OCHISTITEL'YA)

page 144

SO: Collection of Annotations of Scientific Research Work on Construction,
completed in 1950. Moscow, 1951

MAKSIMOVICH, B.M.; FEL'DMAN, E.D.; BARANOV, A.M.; VOROB'YEV, N.A.; KOZLOV,
V.Ye.; AL'TERMAN, S.L., inzh., red.; BOBROVA, Ye.N., tekhn.red.

[Selection of methods for increasing traffic capacity of railroad
lines] Vybor sposobov uvelicheniya propusknoi sposobnosti zheleznoro-
dorozhnykh lini. Moskva, Gos. transp. zhel-dor. izd-vo, 1958.
245 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut
zheleznodorozhnogo transporta. Trudy, no.147) (MIRA 11:7)
(Railroads--Traffic)

VOROB'EV, N. A.

USSR/General Biology. Individual Development.

Abs Jour: Ref. Zh.-Biol., No 9, 1957, 35135

Author : Vorobev, N.A.

Inst :

Title : Conditions and Sources of the Production of Chondroide Tissue
in the Regeneration of Bones.

Orig Pub: Sb. tr. Ukr. tsentr. n.-i. in-ta ortopedii itravmotol., 1955,
6, 57-65

Abstract: Borings were made with an electric drill in the diaphysis of the right radius and the metaphysis of the left radius of rabbits (size of hole, 1 mm) and dogs (2 mm). The wounds were sewn up tightly; sometimes a plaster cast was put on. The term of the observation was 3-30 days (26 experiments in all). The formation of chondroide tissues was not observed in a single case. Full regeneration took place quicker in the metaphysis and in both cases went through the osteoid

Card : 1/2

-2-

USSR/General Biology. Individual Development.

B-4

Abs Jour: Ref. Zh.-Biol., No 9, 1957, 35135

stage. In another series of experiments (29 cases) a wound 2-3 mm. in size was inflicted in the bones of the pelvis (in the wing of the left iliac bone) or an osteotomy of this bone was done. In the first case the results agreed with those above, but in the osteotomy, chondroide tissue developed along with the osteoid. The development of chondroide tissue was also observed in the healing of deep cleavages and particularly in displaced fractures, and in long physiological disturbances in the center of the regeneration. A homogenous mass of non-cellular living matter, in the opinion of the author, stained a pale-rose color by hemotoxilin-eosin, is the source of the formation of chondroide tissue in the center of regeneration. To create the normal physiological conditions in the center of regeneration it is necessary to have an accurate setting of fractures and a securing of it to assure the possibility of an early function of the extremity.

Card : 2/2

-3-

BARANOV, A.M., kand.tekhn.nauk; KARETNIKOV, A.D., kand.tekhn.nauk;
VOROB'YEV, N.A., kand.tekhn.nauk

Important particular characteristics of traffic organization for trains with electric traction. Zhel.dor.transp.
42 no.7:44-48 J1 '60. (MIRA 13:7)
(Electric railroads—Management)

VOROB'YEV, N.A., inzhener.

Conditions for the use of temporary track control points to increase
the traffic capacity of single track lines. Vest.TSNII MPS no.1:48-
53 F '57.

(MIRA 10:3)

(Railroads--Management)

KARETNIKOV, A.D., doktor tekhn.nauk, prof.; VOROB'YEV, N.A., kand.tekhn.
nauk; CHERNYUGOV, A.D., inzh.

Efficient method for staged lengthening of station tracks. Vest.
TSNII MPS 22 no.5:6-11 '63. (MIRA 16:8)
(Railroads—Track)

L 27233-66 EWT(m)/T/EWP(w)/EWP(t) IJP(c) JD

ACC NR: AM6003228

Monograph

40
37 UR/
B21

Ivanova, V. S.; Gorodiyenko, L. K.; Geminov, V. N.; Zubarev, P. V.; Fridman, Z. G.;
Liberov, Yu. P.; Terent'yev, V. F.; Vorob'yev, N. A.; Kudryashov, V. G.

Role of dislocation in the strengthening and failure of metals (Rol'dislokatsii
v uprochnenii i razrushenii metallov) Moscow, Izd-vo "Nauka", 1965. 179 p.
illus., biblio. Errata slip inserted. 4500 copies printed.

TOPIC TAGS: metal, alloy, metal strength, alloy strength, dislocation, dislocation theory, thermomechanical treatment, metal failure

PURPOSE AND COVERAGE: The book is a continuation and development of the ideas of the late Professor I. A. Odintsov on the theory of dislocations. This theory served as the basis for the elaboration of new methods of strengthening metals and alloys. In the first part (Chap. I-IV) of this monograph the role of dislocations in the development of plastic deformation and the generation of flaws is discussed. In the second part (Chap. V-VII), the theoretical premises for metal and alloy strengthening with thermomechanical treatment and the effect of this treatment on the mechanical properties of metals and alloys under static and cyclic loads are reviewed.

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UDC: 669.018.25:669-17

L 27233-66

ACCNr: AM6003228

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Ch. I. Regularities of slopping and strengthening on the different grades of deformation -- 7

Ch. II. Formation of submicroscopic flaws during deformation as a result of multiplication of and interaction between defects of the crystal lattice -- 29

Ch. III. Effect of grain size, temperature, and deformation rate on the characteristics of metal fluidity -- 46

Ch. IV. Mechanism of brittle rupture and regularities in the defectibility of metals during creep -- 73

Ch. V. Basic premises for the development of methods of material strengthening by means of thermomechanical treatment -- 103

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VOROB'YEV, N.F., mayor, voyennyi shturman pervogo klassa

Improve the aiming techniques during bombing. Vost.Vosd.Fl.
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(Bombing, Aerial)

YOROB'YEV, N.F.

24-58-3-28/38

AUTHOR: Vorob'yev, N.F. (Moscow)

TITLE: The Unsteady Oscillations of a Thin Wing in Supersonic Flow (Neustanovivsheyesya kolebaniye tonkogo kryla v sverkhzvukovom potoke)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 3, pp 153-156 (USSR)

ABSTRACT: The unsteady motion of a thin wing of finite span in an infinite volume of fluid which is at rest at infinity is analysed. The wing is postulated to cause small disturbances only. The problem is linearised and the common assumptions of the theory of thin wings are applied. A slightly cambered wing at low incidence is assumed, whose steady motion is a straight line translation at supersonic speed. Small oscillating motions in which the wing surface may be deformed are superimposed. In this problem the velocity potential satisfies a three-dimensional wave equation. Its solutions are given in the form of an integral equation of the Volterra type, whose kernels can be integrated quadratically. There are 3 figures and 5 Soviet references.

SUBMITTED: November 6, 1957.
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1. Wings--Supersonic characteristics--Mathematical analysis

SOV/179-59-1-30/36

AUTHOR: Vorob'yev, N. F. (Novosibirsk)

TITLE: Non-Established Motion of the Span Ends of Wings in Supersonic Flow with Jumping Variation of Velocity (Neustanovivshiesya dvizheniye kryla konechnogo razmakha v sverkhzvukovom potoke v sluchaye skachkoobraznogo izmeneniya skorosti)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1959, Nr 1, pp 167-170 (USSR)

ABSTRACT: Motion of a thin wing in an infinite volume of gas is considered. The wing is moving with a supersonic velocity $u > a$ when at an instant of time t_0 the velocity increases by $c = \text{const}$, i.e. the wing's velocity becomes $u + c$, a hyper-plane of wing motion can be represented in 4-dimensional space $xyzt$, with the limiting conditions defined by the space xyt . The region V (Fig.1) in the space xyt is defined by the points of the wing in motion. The equation of motion of the wing is expressed as in Eq.(1) and the potential of velocity by the formula (2) (Ref.5), where S - surface of the left side of the hyperbolide with its apex at the original of coordinates x, y, t .

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The value of $\varphi_z = -u\beta(\xi, \eta)$ can be defined for the part of V to the left of $\tau = t_0$ and $\varphi_z = -(u + c)\beta(\xi, \eta)$ to the right (β - angle of incidence of an element of the wing). If the equations of the front and back edges of the wing are $\xi_1 = \phi(\xi_1)$, $\eta_1 = Y(\xi_1)$ (Fig.1), the motion of the wing will be supersonic as expressed by Eqs.(3). The potential of velocity in this case can be calculated from Eq.(2) for the points of the wing ($z = 0$) and above it ($z \neq 0$) and expressed as Eq.(5) where the region s_1 is described by the hyperbole (Fig.1), the equation of which is Eq.(6), and by the circle, Eq.(7). The region s_2 lies inside the circle (Eq.7) while the region s_3 is limited by the segments of the hyperbole (Eq.8), by the other circle (Eq.7) and by the front edge of the wing. At an instant t the point M_1 of

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the wing (Fig.1), the surface of which does not cross the region V , will be found in a condition of disturbances caused by an established movement of the wing with velocity $u + c$. This will occur when the condition (9) is satisfied. In this case, the front edge of the wing will not satisfy the Eq.(3) because the disturbances are caused by a movement spreading into the region Σ from a side edge ED (Fig.2) at an instant t . The region Σ is limited by the straight lines EK, KK_0 , EL and LL_0 (Eqs.10).

The value of ϕ for the region σ (i.e. part of $z \Sigma$ outside the wing) can be found by taking the potential of velocity for σ as equal to 0. The unknown function ϕ_z inside the region σ (denoted by θ) can be found when Eqs.(11) for σ^{**} and $\theta = \theta_u$ is considered ($\xi^* = \phi^*(\eta^*)$ and $\xi^* = \phi_1^*(\eta^*)$ - equations of the front and side edges).

The value of $\theta = \theta_{u+c}$ for the region σ^* is found from Eq.(13). The region σ_1 (Fig.3) is limited by the straight lines PM (Eq.14) and MC (Eq.(15) and by the segments CB

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(side edge), BP (curve APB) . The reason σ_2 can be considered as composed of two parts: σ_1^* - limited by the segment BPG, the curve APB and the arc GB of a circle (16); σ_2^* - limited by the segment AG, the curve APB, the arc GB of the circle (16) and by the side edge of the wing. The region σ_3 is defined by the straight lines RT (Eq.17) and TE (Eq.18), the segment EA and the arc AR (Eq.16). The region s_1 is limited by BC, CN (Eq.18), NB (Eq.16) while s_2 is limited by AB and BNA (Eq.16). The region s_3 is limited by AN (Eq.16), NK (Eq.19), KE and EA. The expression (13) in this case (Fig.3) can be written as Eq.(21) when Eqs.(20) are introduced ($\Psi(x_2, y_2)$ - a known function in the right term of Eq.(13)). The solution of Eq.(21) can be found by the method of successive approximations. The motion described in this work can be

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caused in practice by a strong gust of wind when a forward movement of the wing is constant ($c = 0$) and the component $\varphi_z = -u\beta(\xi, \eta)$ becomes $u\beta_1(\xi, \eta)$ at an instant t_0 . All the formulae in this case will be simplified, i.e. $k = k_1$,

$\rho(k) = \rho(k_1)$. There are 3 figures and 6 Soviet references.

SUBMITTED: March 10, 1958.

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10.12.10
AUTHORS:

Yermolenko, S.D., and Vorob'yev, N.F. (Novosibirsk)

TITLE:

On agreement with experiment of characteristics of wings with finite span at supersonic velocities, computed according to the linear theory

PERIODICAL: Akademiya nauk SSSR. Institute mekhaniki. Inzhenernyy sbornik, v. 30, 1960, 131 - 138

TEXT: Many models of isolated wings of different form in plan have been tested in supersonic wind tunnels. The wing elongation λ varied between 1 and 2, and the sweepback angle X_{sr} on the line of chord centers between -40° and $+40^\circ$. All wings had the same reduction (equal to 5,82) and rhombic "supersonic" or symmetrical "infrasonic" profile with comparatively small nose radius. Relative thickness of profile $\bar{c} = 10,8$ and 6 %. Tests were made according to carefully checked methods. The characteristics obtained from the experiments (continuous curves on the figures) are com-

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pared with those of infinitely thin wings ($\bar{c} = 0$) having the same form in plan (dashed curves) computed according to the linear theory shown by Ye.A. Krasil'shchikova (Ref. 3: Teoriya kryla ko-nochnogo razmakha v szhimayemom potoke gaza (Theory of a Wing of Finite Span in a Compressed Gas Stream), Gostekhizdat, 1952) (Case of Supersonic Leading Edge) and by U.F. Khilton (Ref. 4: Aerodinamika bol'shikh skorostey (Aerodynamics of Great Velocities), Izd-vo inostr. lit. 1955) (Case of Infrasonic Leading Edge). Three figures give the comparison of calculated and experimental characteristics of three wings at $M = 2$: with infrasonic leading edge (1-P-10), sound-velocity l.e (6-P-10) and supersonic l.e. (10-P-10). These examples show that the calculated values of the coefficient of lifting power are larger than the experimental ones in all cases, the deviation c_y between the two values being larger for negative sweepback angles of the wing and smaller for positive angles. The calculated values of the coefficient of the longitudinal moment m_z (moments are calculated with respect to the nose of the central aerodynamical chord of the wing) at given values of the

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coefficient c_y are also larger than the experimental ones. The quantity $(dc_y/d\alpha)c_y = 0$ varies comparatively little with the sweep-back angle, according to both calculated and experimental data, but it increases about 28-37%. For the wings considered here the calculated values of $dc_y/d\alpha$ are about 10-20 % larger than the experimental ones. The quantity $(dm_z/dc_y)c_y = 0$ which characterizes the position of the aerodynamical focus of the wing from the nose of the central aerodynamical chord, increases smoothly when X_{sr} varies between -40° and $+40^\circ$, its increase being considerably larger for $\lambda = 1$ than for $\lambda = 1.46$ and $\lambda = 2$. The calculated values of this quantity are larger than the experimental ones, the difference being larger for negative values of X_{sr} (10 - 20 %) and smaller for positive values (up to 10 %). These differences are generally explained by the fact that the calculated values of the derivatives refer to a plate ($\bar{c} = 0$) and the experimental ones to wings composed of rhombic profiles with comparatively large relative thickness.

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tive thickness ($\bar{c} = 10\%$). The investigations show that the differences between calculated and experimental data decrease when the relative profile thickness becomes smaller. To find the cause of the difference between calculated and experimental data, pressure distribution was measured on the surfaces of several models for different attack angles; results are shown on three figures). The calculated results for the front part of the wing are close to the experimental data (except for some cases referring to end sections). In the rear part of the wing the difference between experimental and calculated values of $d\bar{p}/d\alpha$ is larger, but it decreases when the relative profile thickness becomes smaller. For wings consisting of thin infrasonic profiles, the calculated values of $d\bar{p}/d\alpha$ are always close to the experimental ones, except for narrow strips at end sections and trailing and leading edge. Correspondingly, the calculated characteristics $dc_y/d\alpha$ and dm_z/dc_y in the interval $M = 1,3 \div 2,1$ investigated by the authors are closer to the experimental values than in case of thick wings consisting of rhombic profiles. There are 13 figures and 5 references: 3 Soviet-

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